UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,665	04/21/2004	Michel Desgagne	I-2-0496.1US	4930

24374	7590	03/08/2006

VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER
PHUNKULH, BOB A

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/828,665	DESGAGNE ET AL.
	Examiner	Art Unit	
	Bob A. Phunkulh	2661	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12/19/2005</u>.

2a)☐ This action is **FINAL.**　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-13</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-13</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

This communication is in response to applicant's 12/19/2005

amendment(s)/response(s) in the application of **DESGAGNE et al.** for "**METHOD AND**

SYSTEM FOR INTEGRATING RESOURCE ALLOCATION BETWEEN TIME

DIVISION DUPLEX AND FREQUENCY DIVISION DUPLEX IN WIRELESS

COMMUNICATION SYSTEMS" filed 04/21/2004. The amendments/response to the

claims have been entered. No claims have been canceled. No claims have been

added. Claims 1-13 are now pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Miya (US 2002/0105913) in view of *Takoa* et al. (US 2002/0173277), hereinafter *Takoa*.

Regarding claim 1, Miya discloses a method for integrating time division duplex

(TDD) and frequency division duplex (FDD) in wireless communication systems, the

method comprising the steps of:

receiving radio access bearer (RAB) requests along with a plurality of parameters

regarding the request (see paragraph 0042);

selecting either a TDD or FDD connection based on the level of congestion or type of services requested (see paragraph 0042).

Miya fails to disclose selecting the TDD or FDD connection based on the estimated a degree of symmetry in the uplink and downlink connections.

Takoa, on the other hand, discloses monitoring the amount of data transfer volumes on the uplink and the downlink at the a monitoring station i.e. RNC or BSC (see paragraph 0083) selecting the FDD or mix TDD/FDD connection based on the amount data transfer volumes (degree of symmetry) in the uplink and downlink connections (see paragraphs 57-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made implement the prior art teaching of *Takoa* especially selecting high data rate for TDD transmission and low data rate for FDD transmission in the system taught by Miya in order to provides efficient used of the systems' resources –where TDD is suitable for high speed packet transmission and FDD provides a wide coverage area to accommodate a mobile station in a favorable environment.

Regarding claim 2, Miya discloses the TDD connection is selected for RAB requests having data rates above a predetermined threshold (high speed packet transmission, see paragraph 0042).

Regarding claim 3, Miya discloses the FDD connection is selected for RAB

requests associated with voice applications(real-time request i.e. speech the FDD is

selected, see paragraph 0042).

Regarding claim 4, Miya discloses evaluating a symmetry status of the UL and

DL connections periodically once an initial connection has been established in response

to a RAB request; and switching between TDD and FDD modes based on said

symmetry status (the mobile station select TDD or FDD based on the received signal

measurement, see paragraphs 0055 to 0061).

Regarding claim 5, Miya discloses all RAB requests are processed through a

FDD RNC (see figure 5 and paragraph 0042).

Regarding claim 8, Miya discloses a system for integrating TDD and FDD in a

communication system, the system comprising:

a core network (CN) (either telephone network 207 or IP network 208, see figure

5);

a time division duplex radio network controller (TDD RNC)(RNC 203, figure 5);

a frequency division duplex radio network controller (FDD RNC) (RNC 203, see

figure 5); and,

a TDD-FDD selector for receiving a RAB request, and

a selector for selecting either a TDD or FDD connection based on the level of congestion or type of services requested (see paragraph 0042).

Miya fails to disclose selecting the TDD or FDD connection based on the estimated a degree of symmetry in the uplink and downlink connections.

Miya fails to disclose selecting the TDD or FDD connection based on the estimated a degree of symmetry in the uplink and downlink connections.

Takoa, on the other hand, discloses monitoring the amount of data transfer volumes on the uplink and the downlink at the a monitoring station i.e. RNC or BSC (see paragraph 0083) selecting the FDD or mix TDD/FDD connection based on the amount data transfer volumes (degree of symmetry) in the uplink and downlink connections (see paragraphs 57-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made implement the prior art teaching of *Takoa* especially selecting high data rate for TDD transmission and low data rate for FDD transmission in the system taught by Miya in order to provides efficient used of the systems' resources –where TDD is suitable for high speed packet transmission and FDD provides a wide coverage area to accommodate a mobile station in a favorable environment.

Regarding claim 9, Miya discloses a TDD connection is selected for RAB requests having data rates above a predetermined threshold (high-speed packet

transmission request, see paragraph 0042).

Regarding claim 10, Miya discloses a FDD connection is selected for RAB

requests associated with voice applications (real-time request i.e. speech the FDD is

selected, see paragraph 0042).

Regarding claim 11, Miya discloses the TDD RNC, the FDD RNC, and the TDD-

FDD selector are integrated into an integrated TDD/FDD RNC (see figure 5).

Claims 6-7, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable

over the combination of Miya-*Takoa* as applied to claims 5 or 8 above, and further in

view of Petersen (US 2002/0049062).

Regarding claims 6-7, 12-13, the combination of Miya-*Takoa* fails to disclose the

FDD RNC includes a TDD serving radio network controller (S-RNC) and is configured to

support TDD Iur protocols; and only the CN and the FDD RNC are connected via an Iu

interface and RAB requests are processed through the FDD RNC.

Petersen, on the other hand, discloses the FDD RNC includes a TDD serving

radio network controller (S-RNC) and is configured to support TDD Iur protocols; and

only the CN and the FDD RNC are connected via an Iu interface and RAB requests are

processed through the FDD RNC (see figure 1).

Therefore, it would have been obvious to one having ordinary skill in the art at

the time of invention was made includes the teaching of Petersen in the system taught

by the combination of Miya-*Takoa* in order to take advantage of commonly used

protocol and interface in the UTRAN network.

Response to Arguments

Applicant's arguments with respect to claims 1-13 have been considered but are

moot in view of the new ground(s) of rejection.

Conclusion

Any response to this action should be mailed to:

The following address mail to be delivered by the United States Postal
Service (USPS) only:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Or:

The following address mail to be delivered by other delivery services
(Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, Hand
Delivery, etc.) as follow:

U.S. Patent and Trademark Office
220 20th Street South
Customer Window, Mail Stop _____
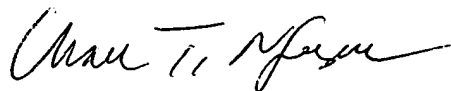Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571)**

272-3083. The examiner can normally be reached on Monday-Tursday from 8:00 A.M.

to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-

week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor **Wellington Chin**, can be reach on **(571) 272-3134.** The fax phone number

for this group is **(571) 273-8300.**

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh
Primary Examiner
TC 2600
Technology Division 2616
March 06, 2006

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600